

# Splenic artery aneurysm rupture: case report of this uncommon presentation

A Mattick, I Gawthrope

Rupture of a splenic artery aneurysm remains an uncommon cause of hypovolaemic shock in the emergency department. This case report highlights that rapid resuscitation, diagnostic imaging, surgical consultation, and subsequent laparotomy remain the priorities in patient management.

A previously healthy 47-year-old man attended our regional hospital having been found pale and unresponsive by his partner. Hours earlier he had been well and cycled for several kilometres. There had been no history of any trauma.

On presentation to hospital he was hypotensive at 74/50 mm Hg, and tachycardic with a pulse of 122 beats/min. Initial blood glucose was 24.2 mmol/l and venous blood gas revealed a metabolic acidosis; pH 7.12,  $\text{PCO}_2$  6.7 kPa,  $\text{HCO}_3^-$  16.3 mmol/l, base deficit -13 mmol/l.

There were no signs of sepsis or trauma. Abdominal examination was unremarkable. No urine was available for testing. The patient responded initially to rigorous intravenous fluid resuscitation and was transferred to the nearest tertiary hospital by ambulance for further management.

En route the paramedics noted that the patient had become agitated, sweaty, and tachycardic.

On presentation to the tertiary hospital he was in severe hypovolaemic shock with a distended abdomen. A bedside ultrasound scan revealed large amounts of intraperitoneal fluid.

At subsequent laparotomy 4 litres of blood was found in the abdomen and

the source was from the splenic artery. A splenectomy was performed along with ligation of the splenic artery. The patient made an uneventful recovery and was discharged home following prophylactic vaccinations and antibiotics.

## DISCUSSION

Splenic artery aneurysms (SAA) are uncommon but represent the most common visceral artery aneurysm.<sup>1,2</sup> They are ranked third in incidence of intra-abdominal aneurysms, after aortic and iliac arteries.<sup>2</sup> The prevalence of SAA in autopsy studies range from 0.01–0.2%;<sup>3</sup> however, the true prevalence is unclear as most SAA are asymptomatic.<sup>4</sup> The natural history of SAA, like most arterial aneurysms, appears to be one of continuing growth and eventual rupture.<sup>1</sup> The reported rate of rupture is between 3–9.6% with an associated mortality of between 10–36%.<sup>1,2</sup> The exact pathogenesis appears unclear but seems most likely due to degeneration of the vessel media from excessive splanchnic blood flow.<sup>2</sup> This would explain the increased incidence of ruptured splenic artery aneurysms in late pregnancy and in patients with cirrhosis.<sup>2</sup>

For diagnosis, if the patient's clinical condition permits, ultrasound or

computed tomography of the abdomen may confirm an intraperitoneal haemorrhage and localisation of the aneurysm. However, angiography allows more precise localisation of the aneurysm and assessment of collateral supply. Subsequent laparotomy, with splenectomy and ligation of the splenic artery, remains the preferred option for treatment.<sup>2</sup>

Rupture of a splenic artery aneurysm remains an uncommon cause of hypovolaemic shock in the emergency department. Rapid resuscitation, diagnostic imaging, surgical consultation and subsequent laparotomy remain the priorities in patient management.

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## Authors' affiliations

A Mattick, Ian Gawthrope, Department of Emergency Medicine, Fremantle Hospital, Fremantle, WA, Australia

Correspondence to: Dr Anthony Mattick, Department of Emergency Medicine, Fremantle Hospital, Alma Street, Fremantle, WA 6160, Australia; anthonymattick@hotmail.com

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